return them to seagrass beds even if displaced by some process (Peterson et al. 1989). Adult bay scallops outside seagrass suffer much greater predation from whelks (*Busycon* spp.) than those maintained inside seagrass beds (Peterson et al. 1989; Prescott 1990), and experimental reduction of seagrass cover resulted in proportionate declines in resident bay scallop abundance (Peterson et al. 1987).

In Pamlico Sound, bay scallop beds are distributed in a narrow band along the Outer Banks from north of Oregon Inlet to Cedar Island. Farther south, bay scallop habitat widens to include the full breadth of Core Sound, Back Sound, and Bogue Sound. Some substantial pockets of suitable and productive bay scallop habitat occur in larger highly saline rivers such as North River, Newport River, White Oak River, and New River. Some bay scallop habitat occurs south of Bogue Inlet (notably in Stump Sound and New River Inlet), but these areas are limited.

Historically, 60% of the bay scallop harvest in North Carolina comes from western Bogue Sound (Salter Path to Bogue Inlet), 35% from Back and Core sounds, and only 5% from all other water bodies (catch statistics from NC Division of Marine Fisheries).

Bay scallop habitat is controlled by all the factors affecting seagrass abundance (turbidity, bottom disturbance especially from fishing practices, disease, temperature, etc.) and by factors affecting bay scallop survival (turbidity [Duggan 1973] and salinity [Mercaldo and Rhodes 1982] primarily). There appears to be planktonic food in excess for suspension feeders in North Carolina estuaries (Peterson and Beal 1989). In the Albemarle Sound, no bay scallops exist because of depressed salinities. Low salinity in Pamlico Sound constrains the bay scallop distribution to a narrow eastern fringe close to Atlantic Ocean inlets. If an inlet were to break through into Currituck Sound during a hurricane, for example, this could create substantial bay scallop habitat in that sound.

The bay scallop is the most physiologically sensitive of all North Carolina shellfish. Consequently, it might act as the fisheries "canary" to indicate future problems in the health of estuarine systems. Similarly, the seagrass beds themselves serve as an indicator of ecosystem health, as shown by the Chesapeake Bay history (Orth and Moore 1983). Bay scallops also have great importance to local fishing communities (Fricke 1980). The bay scallop is harvested and brings income during the winter season, when few alternatives exist for North Carolina fishermen. Furthermore, local shucking and processing of bay scallops, often by the family members of fishermen, add substantially to the economic value of the bay scallop to North Carolina.

E. 1. b. Status of Information. The function of bay scallop habitat is reasonably well understood. Among the least understood phenomena is the role of recruitment in determining bay scallop abundance. Bay scallop recruitment appears to be limited in part because specific seagrass beds vacillate greatly from year-to-year in the abundance of bay scallops, as if vagaries of larval transport dictate where the population will be concentrated in any given year. Understanding this issue of the role of recruitment requires much future effort.

The distribution of suitable seagrass habitat in Pamlico Sound is reasonably well known (Section II. B. 2.), although the year-to-year dynamics of seagrass bed distribution are not sufficiently well studied.